

Remarks

The above Amendments and these Remarks are in reply to the Office Action mailed July 27, 2004. Claims 1-17 were pending in the Application prior to the outstanding Office Action. In the Office Action. The Examiner rejected claims 1-17. The present Response amends claims 1, 2, 4-7, 10, 12, 16, and 17, leaving for the Examiner's present consideration claims 1-17. Reconsideration of the rejections is respectfully requested.

I. Rejections under 35 U.S.C. §112

Claims 1, 4-7, 16 and 17 were rejected under 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claims 1, 4-7, 16 and 17 have been amended to include structural limitations defining the tool. Applicant respectfully requests that the rejection under 35 USC §112, second paragraph, be withdrawn.

II. Rejections under 35 U.S.C. §102(b)

Claims 1-3, 9-12 and 16 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by *Selitser*.

To anticipate a claim, every element of the claim must be disclosed within a single reference. *Selitser* describes an inductive plasma (ICP) torch, where "RF power is inductively coupled to an atmospheric pressure plasma to provide energy for ionization and dissociation of the gas or gasses" as "wafer or glass substrate in moved past the plasma flow from the torch." (column 4, line 42-49). Such ICP torch is not self-sustaining since it requires energy input in the form of an oscillating electric or magnetic field, such as RF power, to be pumped into a gaseous system to create atomic radicals through endothermic processes (processes that require heat). Since such ICP torch does not burn, it can not be characterized as a "flame torch", where flame is defined as "a glowing, gaseous part of a fire" (Webster, 9th Collegiate Dictionary). In contrast, the current invention utilizes a "flame torch" in independent claims 1-3, and 16 that is self-sustaining and does not require any energy inputs when the "reactive precursor" is injected/received in the flame torch. Injection of a reactive precursor into a flame torch is fundamentally different from injecting it into an ICP or any

other kind of RF plasma because the flame torch breaks down the reactive precursor by the thermal interaction of the chemical reaction, while in contrast, an ICP or other RF plasma breaks down a reactive precursor compound by thermal interaction due to the RF excitation, NOT a chemical reaction.

Therefore, *Selitser* cannot anticipate independent claims 1-3, and 16. Since claims 9-12 depend on claim 3, *Selitser* cannot anticipate claims 1-3, 9-12, and 16, and Applicant respectfully requests that the rejection with respect to these claims be withdrawn.

III. Rejections under 35 U.S.C. §103(a)

1. Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Selitser* in view of *Trassy*.

Prima facie obviousness rejection requires the Examiner to show that the prior art alone or in combination teaches or suggests all elements of the claimed invention. The examiner cites *Trassy* and states that it is “clearly evidencing that hydrogen an[d] oxygen are conventional flame components”. *Trassy* teaches an ICP torch that “includes an outer tube, an intermediary tube and a central injector”, in which one injects argon or hydrogen as the plasma host and oxygen as the reactive precursor gas (column 1, line 11-18). “The function of hydrogen is to increase the thermal conductivity to increase the productivity” (column 4, line 18-19). In another words, it is not being used as a component as would be the case in a “conventional flame” but rather is being used to change the thermal conductivity of the plasma itself, allowing for greater efficiency in cracking the diatomic oxygen molecules through a purely physical thermal decomposition process not a chemical reaction. In contrast, using a chemical reaction of “hydrogen -oxygen flame” in claim 4 of the current invention cracks the diatomic molecule through a chemical combustion reaction. Since neither *Selitser* nor *Trassy* can anticipate a flame torch generating a “hydrogen -oxygen flame”, claim 4 cannot be rendered obvious under 35 U.S.C. § 103(a), and Applicant respectfully requests that the rejection with respect to claim 4 be withdrawn.

2. Claims 5-7 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Selitser* in view of *DePetrillo et al* (hereinafter, *DePetrillo*).

DePetrillo teaches “generating a desired chemical species at or near a point of use such as the

chamber of a reactor in which a workpiece such as a semiconductor wafer is to be processed” (Abstract), and thus cannot anticipate the flame torch claimed in independent claims 3 and 17. Since neither *Selitser* nor *DePetrillo* can anticipate the flame torch claimed in independent claims 3 and 17, and claims 5-7 depend on claim 3, claims 5-7 and 17 cannot be rendered obvious under 35 U.S.C. § 103(a), and Applicant respectfully requests that the rejection with respect to these claims be withdrawn.

3. Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Selitser* in view of *Wagner*.

Wagner teaches using a flame suppressor for a safer device. Such invention cannot be combined with *Selitser* because *Selitser* does not utilize a flame as previously discussed. Thus, *Selitser* in view of *Wagner* cannot render claim 8, which depends on claim 3, obvious under 35 U.S.C. § 103(a), and Applicant respectfully requests that the rejection with respect to claim 8 be withdrawn.

4. Claims 13-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Selitser* the claims call for an inert torch tip, a rotatable work support and use of a multiple nozzles, which are considered obvious choices for the artisan.

As previously analyzed, cannot anticipate the flame torch in independent claim 3. Thus, cannot be modified with an inert torch tip, a rotatable work support or a multiple nozzles to render claims 13-15, which depend on claim 3, obvious under 35 U.S.C. § 103(a), and Applicant respectfully requests that the rejection with respect to claims 13-15 be withdrawn.

IV. Rejection under Doctrine of Obviousness-type Double Patenting

Claims 1-7, 16 and 17 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 31-33 of U.S. Patent No. US 2002/0100751 A1.

A terminal disclaimer in compliance with 37 CFR 1.321(c) is filed with the present Response to overcome the rejection based on a nonstatutory double patenting ground.


V. Conclusion

In light of the above, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and a Notice of Allowance is requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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